

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. XCIX. — THURSDAY, SEPTEMBER 12, 1878. — NO. 11.

LECTURES.

BOSTON CITY HOSPITAL: CLINICAL LECTURE NO. VIII.

BY DAVID W. CHEEVER, M. D.,

Professor of Clinical Surgery in Harvard University.

Wounds of the Scalp. — GENTLEMEN: These two little boys, one aged five the other eleven years, both have scalp wounds. I wish to show them to you in comparison with the more serious case upon which I operated a few days ago. The children came in at different times, each having a lacerated wound, the result of accident. The elder boy was injured some days before the other, and his wound is granulating and nearly closed. In the younger child the injured part is still in the stage of suppuration, but there is no burrowing. In both cases the wound reached the bone, but with the probe I find that in the suppurating case the bone is covered. The younger patient entered the hospital a few days ago with persistent headache, but under good care there has been no extension of the suppuration, and the headache has disappeared. Both boys are now doing well, and show the beneficial effects of the early care which in these cases is so necessary. In the case of the other day you saw the result of neglect of the wound while it was still fresh. You will recall that during the operation upon that patient I said there was a probability that the inflammation would spread through the vascular bone and dura mater to the brain. This course of events is what actually followed, and in about seven days the boy died of meningitis without much effusion.

The children before us are improving so rapidly that I suppose they will recover, yet either boy, especially the younger, might get cold before the wound had thoroughly cicatrized, and so increase the inflammation, which might perhaps lead to serious results. It is an axiom in surgery that no wounds on the head, whether of scalp or bone, and particularly the latter, can be considered trivial. Consequently it will not do to say that victims of scalp wounds are out of danger until the injury has become entirely healed. This is especially true of children.

Internal and External Hæmorrhoids. — This man, aged sixty, has called at my office several times to complain of pain in the rectum and

hæmorrhage at stool. I advised him to enter the hospital. The question is as to the diagnosis. We are probably safe in saying that the trouble is confined to the rectum, and it might be fissures, fistulæ, or stricture. But the frequent hæmorrhages make me suspicious that the blood comes from enlarged hæmorrhoidal veins. What I propose to do first is to examine the rectum with my finger, in order to see what can be learned by that means. I find the bowel large and healthy. Within a half inch of the anus are pendulous masses, which begin to appear when the patient forces down the bowel by straining. Beyond this first half inch of the rectum no other trouble is apparent. At this stage of the examination I think it a good plan to dilate the sphincter muscle in order to get a look at the piles. In the female we have a better opportunity of accomplishing this by introducing a finger into the vagina, and pushing the hæmorrhoids down through the anus. In the male we have to work in the rectum alone. By rupturing the sphincter muscle in a case like this, we not only see the hæmorrhoids much more readily, but we spare the patient the severe pain which otherwise would arise from the effect of an operation. By means of the thumbs it is easy to rupture this muscle. I showed you the method a few days ago. The thumbs are to be thrust into the anus as far as their first joint; then, with the fingers on the tuberosity of the ischium of either side, the thumbs are slowly but forcibly separated until the muscular fibres are torn apart, and, as in our patient, the hæmorrhoids are seen coming down. Dr. Van Buren, of New York, was, I believe, the first to describe this method. Apparently we have here two classes of piles, and a very perfect illustration of each. Around the anus are the external variety, namely, the purple and dilated hæmorrhoidal veins, which, at the junction of skin and mucous membrane, have become hard and organized. Within this hardened circle are bright red masses, somewhat excoriated, which formerly were above the sphincter muscle. These are the internal piles which have prolapsed since I ruptured the sphincter. They are fed partly by arterial blood. In the centre of this double mass of purple and scarlet is the opening into the bowel. The experience of the patient has been that, whenever his bowels were moved, straining forced down the piles, which, as you now see, bled at points. In one locality I find a solid body; this is a venous pile which has become filled with a thrombus or a hardened clot. Now in treating this case there are three methods of procedure, either one of which we may adopt, namely, cauterization, the knife, or the ligature. The treatment proposed by Allingham, of London, will probably be the most advantageous in this case, and is a combination of incision and ligature. If we use the latter alone the patient is subjected to great pain, and the separation is very slow. On the other hand, if we cut between the skin and the mucous membrane, in a direction parallel with the bowel,

and then apply the ligature, there is much less pain, and the tumor separates easily. This is the Allingham method. After this operation upon internal hæmorrhoids a T bandage should be applied over sponges, the patient kept in bed, and opium given to prevent stools. In spite of the opium the bowels are sometimes opened. In such case do not resist nature, but give an injection of olive oil. In beginning the operation upon this patient, let me remark that it is important not to cut away too much of the true skin. If we do the cicatrix will contract, and prevent easy opening of the bowels. First, then, I make an incision, and freely dissect the skin from the mucous membrane. I have now dissected out two large masses, which I think may be included in one ligature. I find, too, that one of these masses is the internal, and the other one of the external piles. The rupture of the sphincter and prolapse of the mucous membrane have virtually converted the two masses into one. Incising lightly the mucous membrane around the mass, I apply the ligature in this incision, tie it firmly, and leave the ends hanging out. The mass has already begun to whiten, and if the circulation in the tumor does not entirely cease I shall put on another ligature. Having made one side clear, so soon as the mass separates the skin will fall into folds. We now take the other side and treat it in the same manner. After dissecting up the skin with the knife, you will remark that I complete the dissection with straight scissors. It is an easier method. On this side the mass is too large to be included in one ligature, and hence must be transixed by a needle carrying a double ligature, each part of which ligates one half of the tumor. I now observe that one of these masses is still too red, and I therefore renew the ligature. I have seen patients put to bed after ligation, notwithstanding the pile showed a red color. This is always a mistake, for the time of separation is thus invariably much prolonged. When the ligature is properly applied it arrests circulation, and the pile has a pale blue color. By following the Allingham method and cutting parallel to the long axis of the bowel, we have now thoroughly enucleated the piles without dividing any of the large vessels. Formerly the directions were to return the hæmorrhoids within the sphincter, leaving the ends of the ligature on the outside. But in our patient this need not be done, for we have ruptured the sphincter, and the ligated masses prolapse by gravitation. The after-treatment has been already mentioned. It is important to keep the parts thoroughly moist. I have therefore adopted the plan of applying a large wet sponge under the pressure of a T bandage. This will supply moisture for twenty-four hours, and we thus avoid disturbing the patient by changing the dressing. If the patient be kept under opium he will probably get along very comfortably. In cases of hæmorrhage what is to be done? The best thing to do is to introduce a sponge, having a string attached, into

the rectum, and apply a second under pressure over the anus. If the bleeding persist we must use a styptic, as, for example, the persulphate of iron, although it sometimes excoriates the bowel. The ligatures will separate in from five to seven days. Antiseptic dressings must be used.

Bullet Wound in the Thigh. — This patient was shot while running, the ball entering the back of the thigh and passing downward toward the ham. It has not been extracted. The accident occurred nine days ago. Two days later he entered the hospital. There was then so much swelling and redness that they extended as far down as the popliteal space, and at that time I did not think it well to probe for the ball. One week ago there seemed to be danger of cellular abscess in the track of the bullet, but under the effect of rest and other treatment the inflammation and redness have subsided, and I now propose to search for the bullet. Here is the point of entrance of the ball, but, as you see, there is no place of egress. When the patient entered the hospital there were symptoms of gun-shot wound, — the ragged edges and the slough hanging out of the bullet hole, — but now there is only this smooth, round opening.

Gun-shot wounds, as you know, do not heal by the first intention. This is so rare that a case in which it occurred is related by Larry, the famous surgeon of Napoleon's wars, as the only one he saw in all his experience. In the wound there is often some foreign body, as a bit of wadding or cloth, which has to slough out. The patient showed me his clothing, and I found a valvular piece of cloth which had been cut out by the bullet, but had not entered the wound.

In searching for a ball if we force the probe it is easy to increase the depth of the wound to any distance. We should be careful to avoid this error. My instrument enters about four inches, and does not seem to touch either bone or ball. The latter is probably buried in the muscles of the popliteal space, for I do not find it, and Nélaton's probe, which I am now using, is not marked by the bullet. In fact, the porcelain knob of this probe in my hands has been stained in only a single case. It is not wise to search too long; therefore, as I find nothing, we will put the patient to bed and poultice the wound. The ball may become encysted and remain quiescent for years, or it may burrow about and cause suppuration, in which case we shall have to make a counter opening. But at present there is no reason for doing this. We can only wait the progress of events.

Lumbar Abscess. — This patient has already been brought before you on account of spinal trouble and cold abscess in the course of the ribs. The abscess has been twice aspirated, but in two or three days refilled, and made the patient as uncomfortable as ever. It looks larger than at any previous time. Although the pus was as thick as custard neither of the needle punctures has burst, as I had expected. But, unless it be

opened, the abscess is sure to break. Consequently I shall make an artificial opening. With the point of my knife I pick down through the skin at the place of puncture; working in this way in order to examine the sac before I lay it open. I find that the abscess is attached to the muscles, and not to the skin, — a point I wished to decide. Now I make a free opening, and expose a very large cavity. We propose to force out the air, apply a compress, and allow the abscess gradually to discharge.

Case of Suspected Calculus. — This man complains of pain during micturition. He says the act is attended with difficulty, and that his urine is bloody. He has several times visited the out-patient department, and has once been sounded for stone. He took no ether then, and nothing was found in the bladder. I therefore propose to etherize him, and make another trial. There is nothing more deceptive than the symptoms of stone in the bladder, for it is sometimes absent when there is every reason to suppose its existence. A granular and sabulous condition of the bladder will occasionally lead the surgeon to fancy he has touched a stone. While making the examination the position of the patient may be changed. By this procedure the stone, if there be one, will roll about, and thus come in contact with the sound. If we still fail to find it we should tilt the patient's pelvis by placing a pillow beneath the hips. The stone may have lodged behind the prostate gland; canting the pelvis will cause it to gravitate out, and descend to the fundus of the bladder. Sometimes we are aided by filling the bladder with water; in other cases the finger is put into the rectum, and the stone lifted into contact with the sound. Or it may be we do not find it at all.

On several occasions our patient has had gonorrhœa, but there has been no discharge within twelve months. He has also had a fall which injured his back, and may have had some share in causing the cystitis and perhaps formation of calculi. We find albumen in the urine, but no more than may be accounted for by the pus and blood. It is possible that the gonorrhœa has developed a deep urethritis, so that although there is no abnormal discharge from the penis the urine is made purulent. Whether there be any affection of the spine I cannot tell, but if caries has become developed it probably has been one cause of the trouble. The sudden stoppage of the urine may be due to spasmodic closure of the urethra during the act of micturition.

Now as to the instruments used in sounding for stone. Here are two kinds of sounds: one is the ordinary sound of solid steel, smooth, having a long beak, and easy of introduction; the other, which I now show you, is the Thompson sound, and a much better instrument, for it has a short beak, by means of which it is easy to find the stone when it has fallen behind the prostate gland, while a long beak would simply pass over and not detect it. Again, when we wish to upset the beak in

Rye Ponds, near White Plains, in West Chester County. These have an area of two hundred and ten acres, and by an outlay of one million two hundred and fifty thousand dollars for building dams, etc., an additional daily supply of ten million gallons of water could be secured to the city.

On the 18th of August Dr. Benjamin R. Robson, the oldest member of the New York County Medical Society, died, in the ninety-third year of his age. He was one of the original incorporators of the society in 1806, and was also its treasurer for many years.

P. B. P.

SHORT COMMUNICATIONS.

OBITUARY.

DR. EDWARD WARREN was the youngest son of Dr. John Warren, of Revolutionary memory, and nephew of Gen. Joseph Warren, M. D., who fell in the battle of Bunker Hill, June 17, 1775. His mother was daughter of George Collins, of Newport, R. I.

Dr. Edward Warren was primarily educated in the Boston Latin School. He entered Harvard College in 1822 and graduated in 1826. He studied medicine with his brother, the late Dr. John C. Warren, graduated with high honors from the Harvard Medical School in 1829, and then finished his professional education by studying a year in Europe. Thus prepared in the highest manner for the work he had undertaken, he entered on its active sphere in Boston with an earnest love for it, and conscientiously feeling the responsibility of the work that lay before him. Here he labored diligently and successfully until 1840, when, preferring the country, he removed to Newton Lower Falls, where he practiced for about fifteen years. Afterwards he spent the remaining winters of his life in Boston.

In 1835 he married Caroline Rebecca, daughter of Prof. Henry Ware, Sen., of Cambridge, and sister of Dr. John Ware, of Boston. This happy union continued until her death, in 1869. They had no children.

He was for many years a devoted member of the Boston Natural History Society, and of the Boston Society for Medical Improvement, and a member and councilor of the Massachusetts Medical Society.

Throughout his life he was a diligent student, and he became an accomplished scholar. He was a writer of great value in the *New England Quarterly Journal of Medicine and Surgery*, *American Journal of the Medical Sciences*, and other medical journals. Among his articles were a Sketch of the Progress of the Cholera in 1852, Remarks on Stammering, After Pains succeeding Labor, Ergot, etc. Dr. Warren wrote three prize dissertations, on Scrofula, Rheumatism, and Erysipelatous Inflammation. These were published in Philadelphia in 1840. He wrote an admirable life of his father, the first Dr. Warren, and likewise the life of his brother, the late Dr. John Collins Warren. In 1855 he visited Europe and there spent a year with his wife.

He was a warm friend of humanity, and actively interested in the moral condition of the poor. He found ample, and to him very pleasant, opportunity to gratify this feeling by connecting himself with his friend, Rev. Mr. Winkley, minister at large in Boston, and became a visitor to the poor in the later winters of his life. Here he found an open field for his sympathies, and was a very acceptable friend to these people in his new and charitable calling.

In May, 1877, he had a slight paralytic attack, yet he went about and enjoyed life among his friends, and still contributed to their happiness. He continued his studies and his attentions to his farm. In May, 1878, he failed rapidly, and on the 23d closed his useful life at the age of seventy-three.

E. G.

CURARE IN HYDROPHOBIA.

MR. EDITOR,—In your interesting article of last week upon hydrophobia some general conclusions are presented upon the action of curare upon the organism. In my studies in physiology and pathology during the last few years I have often observed a varying action from the same dose of curare which did not depend upon the quality of the drug. The period of paralysis in different frogs after the same amounts of the drug varies within wide

limits, and repeated administration of the same dose of curare to the same frog on successive occasions by no means indicates the same duration or completeness of paralysis. In winter, when the circulation in the frog is considerably reduced, the period of action of the curare is somewhat prolonged.

In cats the action of curare is far more evanescent than in frogs. Half-grown kittens were the subject of experiment. A large dose (amount not positively determined) was absorbed from the cellular tissue, and began to demonstrate its presence in the circulation in about ten minutes. It caused great uncertainty in walking, frequent falls, and a general appearance of discomfort, but not of actual pain, which lasted about fifteen minutes and subsided quite rapidly. Repeated injections produced no further result, and the kitten recovered readily and perfectly.

The quality of the drug is subject to great variation, some specimens being almost worthless. I have obtained most satisfactory results from solutions of that solid extract which presented a brittle fracture and were of a glistening, dark-brown color. The most useful form for subcutaneous use seems to be a solution of all portions of the drug in distilled water. A sediment is deposited, which need not be disturbed in using the solution. A dose of such a solution, containing from 0.0075 to 0.01 gramme of curare, will generally prove sufficient for an ordinary speckled frog. This is about one sixth the maximum dose given in the case of hydrophobia reported in the last JOURNAL, and the question arises, Would not the human system bear a larger amount of the drug? Its rapid elimination would seem to call for frequent repetitions of the same dose in order to insure its continued action.

Yours truly,

ALBERT N. BLODGETT.

SPLENOTOMY.

CAMP CŒUR D'ALENE, I. T., August 13, 1878.

MR. EDITOR, — In the article on Recent Progress in Surgery in your issue of June 27, 1878, page 841, under the heading of Splenotomy, the writer refers to Dr. Martin's recent case, and the reader is left under the impression that previous to this case there had been nine operations with only three recoveries. Dr. Otis, in his great work, the second surgical volume of the Medical and Surgical History of the Rebellion, page 152, has tabulated twenty-six (26) operations of splenotomy. In the twenty-six cases "partial or complete removal of the spleen was undertaken sixteen (16) times on account of traumatic lesions, ten times on account of cystic, hypertrophic, or other pathological alterations. There is the surprising result that the cases of the first group, without exception, terminated favorably. Of the pathological cases, four recovered and six died."

GEORGE M. KOBER, M. D., *Act. Assist. Surgeon, U. S. A.*

ARMY MEDICAL BOARD.

For the benefit of those desiring to enter the service we print below a "memorandum" issued by the War Department, containing all the information an applicant might wish to know. We understand that an army medical board will be in session in New York during the months of October and November, and that there are eleven vacancies in the corps. Young men who are qualified will find this a good opportunity, as they will secure immediate employment and appointment.

[EXTRACT FROM LAWS OF THE UNITED STATES.]

ACT OF CONGRESS, Approved JUNE 30, 1834.

"SECTION 1. *Be it enacted, etc.,* That from and after the passage of this act, no person shall receive the appointment of assistant surgeon in the army of the United States unless he shall have been examined and approved by an army medical board, to consist of not less than three surgeons or assistant surgeons, who shall be designated for that purpose by the Secretary of War, and no person shall receive the appointment of surgeon in the army of the United States unless he shall have served at least five years as an assistant surgeon, and unless, also, he shall have been examined by an army medical board constituted as aforesaid."

ACTS OF CONGRESS, *Approved* JUNE 23, 1874, and June 26, 1876.

"SECTION 4. That the medical department of the army shall hereafter consist of one surgeon-general, . . . one assistant surgeon-general, . . . one chief medical purveyor, four surgeons, with the rank, pay, and emoluments of colonels, two assistant medical purveyors, . . . eight surgeons, with the rank, pay, and emoluments of lieutenant-colonels, fifty surgeons, with the rank, pay, and emoluments of majors, one hundred and twenty-five assistant surgeons, with the rank, pay, and emoluments of lieutenants of cavalry for the first five years' service, and with the rank, pay, and emoluments of captains of cavalry after five years' service." . . .

All candidates for appointment in the medical corps must apply to the Honorable Secretary of War for an invitation to appear before the medical examining board. The application must be in the handwriting of the candidate, stating age and birthplace, and be accompanied by testimonials from professors of the college in which he graduated, or from other physicians in good repute. Candidates must be between twenty-one and twenty-eight years of age, and graduates of a medical college, having a thorough and complete course of medical education — evidence of which must be submitted to the board before examination.

The morals, habits, physical and mental qualifications, and general aptitude for the service of each candidate will be subjects for careful examination by the board, and a favorable report will not be made in any case in which there is a reasonable doubt.

The following will be the general plan of the examination : —

(I.) A short essay, either autobiographical or upon some professional subject — to be indicated by the board.

(II.) Physical examination. This will be rigid, and each candidate will, in addition, be required to certify "that he labors under no mental or physical infirmity, nor disability of any kind, which can in any way interfere with the most efficient discharge of his duty in any climate."

(III.) Oral examination on subjects of preliminary education, general literature, and general science. The candidate must satisfy the board in this examination that he possesses a thorough knowledge of the branches taught in the primary schools, and a failure to show this will end his examination.

Oral examination on scientific subjects will include chemistry and natural philosophy, and that on literary subjects will include English literature, history of the United States, and general history — ancient and modern. Candidates possessing a knowledge of the higher mathematics, the ancient and modern languages, will be examined therein, and due credit given for a proficiency in any or all of these subjects.

(IV.) Written examination on anatomy, physiology, surgery, practice of medicine and general pathology, obstetrics, and diseases of women and children. Oral examination on these subjects, and also on medical jurisprudence, materia medica, therapeutics, pharmacy, toxicology, and hygiene. Few candidates pay the attention to hygiene which it deserves : it is made an important subject in this examination.

(V.) Clinical examination, medical and surgical, at a hospital.

(VI.) Performance of surgical operations on the cadaver.

The board will deviate from this general plan whenever necessary, in such manner as they deem best to secure the interests of the service.

The board will report the merits of the candidates on the several branches of the examination, and their relative merit in the whole, according to which the approved candidates will receive appointments to existing vacancies, or to vacancies which may occur within two years thereafter.

An applicant failing one examination may be allowed a second after one year, but not a third.

No allowance will be made for the expenses of persons undergoing examination, as this is an indispensable prerequisite to appointment, but those who are approved and receive appointments will be entitled to transportation on obeying their first order.

(Signed)

GEORGE W. MCCRARY, *Secretary of War.*

WAR DEPARTMENT, *January 1, 1878.*

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the rectum, and apply a second under pressure over the anus. If the bleeding persist we must use a styptic, as, for example, the persulphate of iron, although it sometimes excoriates the bowel. The ligatures will separate in from five to seven days. Antiseptic dressings must be used.

Bullet Wound in the Thigh. — This patient was shot while running, the ball entering the back of the thigh and passing downward toward the ham. It has not been extracted. The accident occurred nine days ago. Two days later he entered the hospital. There was then so much swelling and redness that they extended as far down as the popliteal space, and at that time I did not think it well to probe for the ball. One week ago there seemed to be danger of cellular abscess in the track of the bullet, but under the effect of rest and other treatment the inflammation and redness have subsided, and I now propose to search for the bullet. Here is the point of entrance of the ball, but, as you see, there is no place of egress. When the patient entered the hospital there were symptoms of gun-shot wound, — the ragged edges and the slough hanging out of the bullet hole, — but now there is only this smooth, round opening.

Gun-shot wounds, as you know, do not heal by the first intention. This is so rare that a case in which it occurred is related by Larry, the famous surgeon of Napoleon's wars, as the only one he saw in all his experience. In the wound there is often some foreign body, as a bit of wadding or cloth, which has to slough out. The patient showed me his clothing, and I found a valvular piece of cloth which had been cut out by the bullet, but had not entered the wound.

In searching for a ball if we force the probe it is easy to increase the depth of the wound to any distance. We should be careful to avoid this error. My instrument enters about four inches, and does not seem to touch either bone or ball. The latter is probably buried in the muscles of the popliteal space, for I do not find it, and Nélaton's probe, which I am now using, is not marked by the bullet. In fact, the porcelain knob of this probe in my hands has been stained in only a single case. It is not wise to search too long; therefore, as I find nothing, we will put the patient to bed and poultice the wound. The ball may become encysted and remain quiescent for years, or it may burrow about and cause suppuration, in which case we shall have to make a counter opening. But at present there is no reason for doing this. We can only wait the progress of events.

Lumbar Abscess. — This patient has already been brought before you on account of spinal trouble and cold abscess in the course of the ribs. The abscess has been twice aspirated, but in two or three days refilled, and made the patient as uncomfortable as ever. It looks larger than at any previous time. Although the pus was as thick as custard neither of the needle punctures has burst, as I had expected. But, unless it be

opened, the abscess is sure to break. Consequently I shall make an artificial opening. With the point of my knife I pick down through the skin at the place of puncture; working in this way in order to examine the sac before I lay it open. I find that the abscess is attached to the muscles, and not to the skin, — a point I wished to decide. Now I make a free opening, and expose a very large cavity. We propose to force out the air, apply a compress, and allow the abscess gradually to discharge.

Case of Suspected Calculus. — This man complains of pain during micturition. He says the act is attended with difficulty, and that his urine is bloody. He has several times visited the out-patient department, and has once been sounded for stone. He took no ether then, and nothing was found in the bladder. I therefore propose to etherize him, and make another trial. There is nothing more deceptive than the symptoms of stone in the bladder, for it is sometimes absent when there is every reason to suppose its existence. A granular and sabulous condition of the bladder will occasionally lead the surgeon to fancy he has touched a stone. While making the examination the position of the patient may be changed. By this procedure the stone, if there be one, will roll about, and thus come in contact with the sound. If we still fail to find it we should tilt the patient's pelvis by placing a pillow beneath the hips. The stone may have lodged behind the prostate gland; canting the pelvis will cause it to gravitate out, and descend to the fundus of the bladder. Sometimes we are aided by filling the bladder with water; in other cases the finger is put into the rectum, and the stone lifted into contact with the sound. Or it may be we do not find it at all.

On several occasions our patient has had gonorrhœa, but there has been no discharge within twelve months. He has also had a fall which injured his back, and may have had some share in causing the cystitis and perhaps formation of calculi. We find albumen in the urine, but no more than may be accounted for by the pus and blood. It is possible that the gonorrhœa has developed a deep urethritis, so that although there is no abnormal discharge from the penis the urine is made purulent. Whether there be any affection of the spine I cannot tell, but if caries has become developed it probably has been one cause of the trouble. The sudden stoppage of the urine may be due to spasmodic closure of the urethra during the act of micturition.

Now as to the instruments used in sounding for stone. Here are two kinds of sounds: one is the ordinary sound of solid steel, smooth, having a long beak, and easy of introduction; the other, which I now show you, is the Thompson sound, and a much better instrument, for it has a short beak, by means of which it is easy to find the stone when it has fallen behind the prostate gland, while a long beak would simply pass over and not detect it. Again, when we wish to upset the beak in

the base of the bladder, with a long beak we find it a difficult matter, but easy when we have the short beak of Thompson's sound. So there are several reasons why I prefer it.

In sounding the patient I will first inject water into the bladder. Introducing the sound I detect a roughened condition of the walls of that organ, but I do not find anything else. I now pass my finger into the rectum, but still feel nothing. We now tip up the pelvis by placing a pillow under it, and thus have opportunity to examine the fundus of the bladder. A little blood issues, a result probably of the ulcerated condition of the neck of the bladder, which was caused by old urethritis. With the exception of this and the granular condition of its walls I find nothing abnormal.

Frost Bite. — Our next patient is a colored boy, who is the victim of a frost bite of a fortnight since. The feet are the parts affected. The lad was brought in one week ago in the condition which you now see. The toes show various degrees of injury, from the great toes, which are involved down to the bone, to the small toes, in which the cuticle alone seems affected. Some of them will cover and heal by granulation, but I think it best to remove the distal phalanges of the two large toes. I see the matrix of the nail is intact. I will then split the toe above and below the bone, take out the phalanx, and thus, as far as is possible, save the nail. The bone which I have removed is long and flat. The tissue remaining will make a good stump. In the same manner we now treat the other big toe. The flaps are brought together with plaster.

CASES ILLUSTRATING THE WORK AND DUTIES OF THE MEDICAL EXAMINER.¹

BY F. W. DRAPER, M. D.

WHEN I received the compliment of an invitation to read a paper on this occasion, it was suggested that a report of cases would be acceptable, illustrating some of the difficulties which a Massachusetts medical examiner meets in the performance of his duties under the requirements of the law of 1877. Acting upon this suggestion, I sought for material adapted to its fulfillment; but while I found considerable evidence that the difficulties described had actually occurred, an impartial scrutiny showed that these mainly grew out of inexperience and maladroitness in a novel field of duty. In truth, Mr. President, this single year's record compels the conviction that the Massachusetts law of 1877 concerning medical examinations and inquests in cases of death by violence presents few and comparatively insignificant defects and difficulties to any one who recognizes the purpose of the statute and means hon-

¹ Read before the Massachusetts Medico-Legal Society, June 11, 1878.

estly and conscientiously to execute it. I think the testimony will be concurrent that the law has had exceptional and gratifying success as a new and in a measure experimental piece of legislation. After further trial, experience may show that modifications may be made which shall mend without marring; meanwhile our society is to be congratulated that the general disposition at present is favorable to a fair test of this Massachusetts plan.

I shall be pardoned, therefore, if I feel disinclined to make an exposure of my own short-comings as a medical examiner. Let me address myself to a more congenial task. From the records of the year I have selected the notes of three cases which, on account of their somewhat remarkable character, serve to illustrate, not the defects of the new law, but some of its manifest advantages and capabilities of usefulness. These cases are as follows:—

I. Martin C., a robust and vigorous Irishman, thirty-three years old, came to his death under the following circumstances: He arose as usual at half past five o'clock in the morning of September 4, 1877. His wife was sure that she did not hear him complain of any illness at this time, or at any time previously for many months. She left him at home on the morning above mentioned, while she went to market. On her return, at about seven o'clock, he was at breakfast, his meal consisting of boiled eggs, milk, and bread. After his breakfast he went out, for what purpose and to what place his wife did not know. In fifteen minutes he was brought back to his house by two men who were strangers to Mrs. C. These men stated that they had found C. lying in the middle of a street in a locality having an ugly reputation. When they first saw him two men were standing over him, who disappeared on their approach. Their statement in this respect was confirmed by a woman who lived in the neighborhood, and who saw the group from her window, but could not identify either of the parties. No one saw any blows struck or heard any outcry. No one could be found who had seen C. from the time he left his house till the time he was found prostrate in the street. C. himself could give only a confused account of his acts. When asked by the two men who assisted him where his home was, he gave the number correctly, but he was unable to explain his condition or the manner of its occurrence. In the course of other talk, incoherent in character, he said, "Johnny Murray struck me;" but other information was not forthcoming. On his arrival at home he lay down, complaining of pain in his side and in his head. He made repeated allusions to this latter pain. Without being specific about it, his utterances led his wife to believe that he had been assaulted. This suspicion was strengthened by neighborhood gossip, which mentioned names of witnesses of the supposed quarrel, but the witnesses themselves, when interrogated, professed ignorance of the entire affair.

On the day following the alleged assault C. complained still more of his head, and vomiting supervened. Thirty-one hours after he was found in the street a convulsion occurred, and now for the first time medical aid was summoned. More convulsions followed, and in three hours and a half the man was dead.

At the instance of the attending physician I was summoned by the police, the presumption being that in some manner not yet clear this man had met his death in consequence of violence. From all the facts then at hand this presumption was a reasonable one; at all events, the case was clearly one demanding investigation. Accordingly, being duly authorized by the district attorney, I made an autopsy, but not without some difficulty, for the widow and her neighbors were much excited, and, though strong in their belief that the man had been murdered, they were emphatically strenuous against a post-mortem examination.

Externally, the body presented the following appearances: over the angle of the right scapula was an ecchymosis of the size of an old-fashioned copper cent. On the posterior aspect of the right arm near the elbow was another bruise an inch by half an inch in diameter. These were the only signs of wounds which a careful external inspection discovered. The regions of the head and neck were particularly examined, but nothing was found as the result of the alleged beating.

Except some indications of former inflammation of the right lung and pleura, the viscera of the chest and abdomen were normal.

Examination of the head revealed the following conditions: The scalp was healthy in all respects; there was no trace of extravasation or lesion indicating a blow. On removing the calvaria and the dura mater the vascular meninges were found to be hyperæmic, especially so on the right side. Within the middle lobe of the right cerebral hemisphere were two clots: one near the base of the brain, with well-defined outline, and having the size of an English walnut; the other a little higher and more posterior, and of about the size of a filbert. The former of these clots had broken through the gray cortex overlying it, and the hæmorrhage had given rise to a diffused coagulum within the meninges and extending from the base to the vertex. The lateral ventricles and other portions of the brain beside those described presented no abnormal appearance.

The cranium was in all respects normal and entire.

Cerebral hæmorrhage was the certified cause of death.

II. The dead body of Dora A. S., a middle-aged Irish woman of loose reputation, was found lying at full length upon the floor of her kitchen, early in the morning of November 23, 1877. When the body was first discovered, two men were seen standing near in the same room, in excited conference. These two men were at once taken into custody by the police, on suspicion, and the medical examiner was summoned.

On my arrival at the scene, the body was still disposed as it was found; it was lying upon the back, fully clothed. The limbs were straight, and there was no rigor mortis. The surface of the abdomen was still warm. Near the head there was a collection of semi-fluid, dark-colored matter, probably vomitus. Upon the right cheek was a faint ecchymosis. The clothing was soiled by a copious dejection.

Inspection of the room showed much disorder and slovenliness, with some evidences of violence. The table was set with dirty dishes and half-consumed food. In the midst of the dishes was a pint flask containing a few drops of inferior whisky. Two kerosene lamps were on the table: one of these was burning when the body was discovered; the fragments of the chimney belonging to the other were scattered over the table and on the floor. The furniture of the room was disarranged, but none of it was overturned.

Adjoining this kitchen were two sleeping-rooms, the beds in which were much tumbled. On the mattress of one of the beds was a plentiful deposit of dried blood. The furniture in these rooms showed very rough usage.

At an interview with each of the two suspected men at the station-house the following was presented as their version of the affair: The woman had been indulging in a drunken spree during the previous fortnight, obtaining money in various irregular ways and spending it mainly for liquor. One of the men was her paramour; the other was an acquaintance of twenty-four hours whom she had beguiled on the street. This trio, with other parties who happened in, spent the day (Sunday) before the woman's death in a drunken carouse, consuming ale and whisky freely. Late in the evening the paramour went to bed alone, less intoxicated (if I could believe his statement) than his companions. After an interval the other man succumbed, and the woman remained sitting by the table, very drunk. Each of these men persisted in the assertion that they had no quarreling or violence of any kind. The next morning, at seven o'clock, one of them arose and found the woman lying dead on the floor, but still warm. He aroused the other man, and while they were consulting what to do the party was discovered by the rent collector. Both the men stoutly denied any knowledge of the immediate circumstances under which the woman had died, or of the time of her death. The house was in a thickly-settled neighborhood, but none of the neighbors gave any information tending to make the case clear. The character of this locality, however, with the record of the woman and of her companions and the circumstances of her death, so far as they were learned, justified the presumption that violence was an element in the affair; accordingly an autopsy was required and made in farther investigation of the cause of death.

External inspection of the body discovered a number of faint, super-

ficial ecchymoses with indistinct outlines; the largest of these was in front of the right ear, its dimensions being one and a half inches long by three quarters of an inch wide. Small bruises were found above the left nipple, over the sternum, in the bend of the right elbow, on the abdomen midway between the pubes and umbilicus, and on the right knee. None of these appeared to be recent. The external cavities of the body, the mouth, ears, nose, anus, and vagina, contained nothing abnormal. The scalp on dissection presented no mark of injury or disease. The skull was uninjured. The brain and its membranes were injected to a moderate degree; there was no extravasation of blood, meningeal or cerebral.

Except a small surface at the base of the right lung bound down by old pleuritic adhesions, the lungs were of healthy appearance. The trachea and bronchi were normal. The heart was healthy in all respects. The blood was fluid and of dark color.

The kidneys presented the typical appearances of chronic inflammation; they were lessened in size, their cortices were thin, their capsules were removed with difficulty, leaving the surface granular. Their section showed hyperæmia.

The spleen and intestines were normal. The liver was mottled, dense, and injected.

The uterus was enlarged, and its mucous membrane was hypertrophied and congested.

The stomach was the organ presenting the most noteworthy alteration. Its entire mucous lining showed intense hyperæmia, without erosion at any point; these appearances were most marked at the fundus. The minute disseminated ecchymoses were too numerous and too uniformly spread to be accounted for by digestion or by post-mortem changes. The œsophagus was reddened at its lower extremity, but elsewhere it was unaltered.

The contents of the stomach, the blood, the brain, and the thoracic viscera imparted a distinct alcoholic odor.

In the presence of these post-mortem appearances I felt obliged to exclude the element of violence from the cause of death, and to assign to alcohol the principal and immediate blame.

III. Ellen S., thirty years old, a domestic servant in the family of a wealthy and well-known Brookline gentleman, died in Boston, February 5, 1878. She had left her place in Brookline three weeks previously, being at that time somewhat debilitated, and complaining of ill-defined but not severe illness. She declined the urgent offers of her mistress to provide medical attendance and nursing for her, and declared her preference to go to some friends in Boston, to remain till she recovered. These friends were poor in circumstances and in reputation, fond of alcohol and of its exhilaration. Ellen stayed at their house a

week without seeking medical aid. She appeared exhausted, had no appetite, suffered some abdominal pain. At the end of the week she went with another girl to the office of a regular physician, who, however, had been charged a long time ago with some irregular practices; she received from him two prescriptions. This medicine was dispensed by a neighboring druggist who retained the recipes. The physician visited her at her house twice subsequently, on the two days following the office call; at his last visit he informed her that she would be sick some time with fever, and advised her, as she had but little money, to enter the City Hospital. This advice she declined to follow, and he did not see her again.

Through the next five days following this last medical visit Ellen had no physician, but at the end of that time she grew suddenly and alarmingly worse, her symptoms being chills, exquisitely painful abdominal swelling, high fever, vomiting, and great thirst. An irregular practitioner was now called in. He was struck at once by the swollen belly, and, without any vaginal examination, charged his patient with pregnancy, — a charge which she denied. Then, learning that Ellen had a lover who had recently given her some money, and that she had consulted Dr. —, he persisted in his suspicion that he had a case of criminal abortion on his hands, though there was no hæmorrhage or lochial discharge, and a physical examination was not had. He conveyed his suspicions to the late mistress of the girl, and occasioned considerable excitement in that lady and in her family. Meanwhile, the patient sank, and died in great distress, and without having at any time or to any person, so far as could be learned, acknowledged any facts giving color to a suspicion of wrong practices, yet dying under conditions that might be, and were, readily formed into a basis for the presumption of such conduct.

Acting in obedience to his convictions, the doctor gave me notice of his case and of his interpretation of it, and demanded an investigation. His peremptory zeal was seconded by the warm appeal of the former employer of the deceased that I would leave nothing undone to bring the offender to justice, or, by a thorough inquiry, clear the dead girl's character of the imputation now resting upon it.

I believed I saw more of zeal than discretion in all this crimination, and did not enter on the case with much expectation of seeing judicial proceedings result. I did, however, realize the facility with which grave charges are sometimes made upon slight foundation in fact, and this instance seemed an example. Because, therefore, it was an official obligation, not less than because a medical examination would probably make clear that which was now obscure, I took charge of the dead body, directed its removal from the keeping of its drunken guardians, and sought, by dissection, for the cause of death.

This autopsy was made fifty-five hours post mortem. Omitting its details, I may summarize its results as follows: there was abundant evidence, both externally and internally, of general peritonitis, with suppurative exudation. In the right broad ligament of the uterus an abscess had developed, matured, and ruptured, the exceedingly offensive purulent contents having escaped into the abdomen to originate the mischief there. The cavity of this abscess was of the size of a large orange.

The uterus was very slightly enlarged. It showed no appearance whatever of recent impregnation, of disease, or of mechanical injury; its mucous membrane was entirely normal. The vagina, likewise, was healthy.

The stomach and intestines gave no indication of violent treatment, by drugs or otherwise.

The cause of the death was certified to the registrar and to the district attorney as pelvic abscess resulting in general acute peritonitis.

If time and your forbearance permitted, other similar cases might be added to the foregoing; but those related will suffice to illustrate the purpose of this paper. It must be obvious that these three deaths were attended by circumstances which gave them a distinctive and exceptional character. If the testimony of parties claiming to be cognizant of the concomitant facts was to be credited, neither of the three individuals died in consequence of the operation of natural causes simply. Nor was either of the deaths a death by *violence* simply, according to the ordinary interpretation. They differ, on the one hand, from the instances of sudden death in which the individual, in the midst of his family or friends, expires in the course of nature without a warning; and, on the other hand, the inspection of the bodies furnished no external, unequivocal sign to point the way to a clear medical opinion that violence had been actually used. So that, in the first instance, all these cases, as to the cause of death, lay under great uncertainty. In one respect, indeed, they had a community of character; over all of them rested the suspicion, approaching to a reasonable presumption, that the deceased persons came to death in consequence of unlawful acts on the part of other persons, and this regardless of the unrestrained neighborhood gossip which always speaks the word "murder" glibly and inconsiderately. Specific accusations were indeed expressed, and in one of the cases arrests were made. In two of the cases the attendant lent the weight of his medical opinion in favor of the theory that violence had been done to the persons of the deceased. Now, these elements, once imparted to the cases, could not be excluded off-hand; they required consideration, they compelled attention. These three dead bodies with their equivocal environments might readily present, on that account,

problems for solution more difficult than they could have done had they been found with their identity and history actually unknown. Cases of this kind, therefore, offer the opportunity for the application of forensic medicine in its highest function; they demand patient investigation, an unbiased judgment, deliberate caution, intelligent search for the truth, judicious reticence. Upon the answer to the question in such instances, "What caused this person's death?" depend not only individual interests, but in the broadest sense the conservation of public morality and the promotion of justice.

How does the Massachusetts law of 1877 meet these and similar cases? I have intimated that the law possesses special advantages in this regard. Without exhausting the list, let me mention three of these:—

In the first place, the law provides that a purely medical question shall be solved by a medical man, whose conclusions are preliminary to other proceedings in the case. It creates a medical examiner, and demands of him that he shall determine the cause and manner of death, and that alone. It leaves him free to prosecute his inquiries from the medical stand-point simply. It does not hamper him with a complication of functions; it does not compel him to be a physician, a detective, a constable, a judge, and a jurymen, all in one. The question, "Who caused this death?" is not for him; it is of no concern to him except as it is related immediately to the solution of that other question for the answer to which he is directly responsible, namely, "What caused this death?" He is not to lose sight of the fact that he is a physician in the employ of his county, to do a physician's work. He has no need or right to embarrass himself with speculations about murder, justifiable homicide, or simple assault. The law thus aims purposely to remove him beyond the influence of bias and the thralldom of technicalities, and makes it his single aim to ascertain the truthful solution of a purely medical problem.

But, secondly, the law does not create this medical examiner and leave him without the requisite facilities and authority for prosecuting his investigations in a strictly medical manner. It makes easy the one method of inquiry which is indispensable, — the necropsy. It interposes such safeguards and checks only as are needed to prevent the abuse of the authority conferred. The machinery is simple, direct in application, effective. There is no circumlocution, no delay in action. The problem and the agent for its solution are brought into immediate relation.

It thus happened, in each of the three cases cited, that the application of the methods provided by the Massachusetts law cleared up at once and authoritatively matters that were involved in much doubt and obscurity; resolved and dismissed the imputation of crime; and by a determination that the cause of death was not by violence at the hands of others fully satisfied the requirements of public order and of justice.

And this leads us to the third consideration in behalf of the new law, one which you must have already anticipated, namely, that with the medical report in such cases the official investigation comes to an end, save in circumstances exceptional to the last degree. Thus, as all will recognize, the medical examiner is a responsible agent by whose professional knowledge the public treasury and the public comfort and morals constantly profit in that he is a stay to what, under other circumstances, would be unnecessary, expensive, and, possibly, scandalous inquests.

RECENT PROGRESS IN ANATOMY.¹

BY THOMAS DWIGHT, M. D.

DR. W. ROUX² has written a long paper to prove that the subdivisions of the blood-vessels occur according to the laws of hydro-dynamics, and that they are so arranged as to distribute the blood with the least possible expenditure of vital force. The essay is altogether too abstruse for analysis in this report, and is mentioned merely to serve as an introduction to Professor Schwalbe's³ paper on the influence of displacements by growth (*Wachstumsverschiebungen*) on the conformation of the arterial system. Roux admits that it is impossible for the force of a current to occasion vessels to sprout out at right angles to the parent trunk, much more to make them recurrent; nevertheless such forms are very numerous in the adult. The principle, as Schwalbe himself says, is not new. We are all familiar, for instance, with the lengthening out of the spermatic artery as the testis descends, and of the change of relations between the spinal column and cord that goes on after birth, due to the more rapid growth of the former. Schwalbe, however, calls our attention to new points, and most important of all shows how certain peculiarities in one part of the body make probable the existence of others elsewhere. His observations are not sufficiently numerous to be of much value by themselves, but he has the merit of opening a new field, presumably a rich one, for inquiry.

The reader can easily construct a few diagrams that will illustrate the principle involved. Let him draw two parallel vertical lines A B and C D, and connect them by a number of transverse ones at right angles to the first two. Let the line A B represent an artery, and C D a muscle or anything else beside it, and let the transverse lines be branches running from the former to the latter. Now it is evident that if C D grows twice as fast at both ends as A B does, the branches will become divergent, the upper ones running upward, the lower downward. If, on the other hand, A B grows, the faster they will converge,

¹ Concluded from page 306.

² *Jena'sche Zeitschrift für Naturwissenschaft*, Band xii., Heft 2, 1878.

³ *Ibid.*

and, supposing the current to be downward, in the former case the upper vessels and in the latter the lower will be recurrent. By imagining that the points A and C remain fixed opposite each other, and that B and D travel away from them at different rates, it is easy to see that other but analogous changes will occur. If certain parts of either or both lines increase at a different rate from other parts of the same line, of course the matter becomes more complicated.

We will now enumerate some of Schwalbe's observations, and then show the diverse effects that apparently are brought about by a common cause. He first proves that the combined length of the innominate artery and the right common carotid is much greater relatively to that of the descending aorta in foetal than in adult life. In other words, the latter grows faster than the two former. A comparison of the rate of growth of the descending thoracic and of the abdominal aorta shows no difference of importance. It appears, however, that the abdominal aorta does not enlarge at one uniform rate. It may be divided into three parts: the first to the superior mesenteric artery, the second between that and the inferior mesenteric, and the third thence to the bifurcation. There is so much individual variation in the origin of these arteries that we can attach no great value to Schwalbe's conclusions, which are that as the body grows the first part increases more and more slowly, and the third part quicker and quicker. He is inclined to think that taking the great arterial trunk from the bifurcation of the carotid to that of the aorta we have a series of segments, each of which grows faster than the one above it. We will next consider the form of the superior thyroid artery, the first branch of the external carotid. Anatomists give three accounts, all of which, no doubt, are founded on fact: the first is that the artery is at once recurrent, that is, running downward from its origin; the second, that it forms an arch with the convexity above; the third, that it arises at an acute angle from the carotid, runs upward, and then turns over to run down again. The second and third forms are but different degrees of the same thing. The first form, the purely recurrent, is the rarest in the adult, but it apparently is even far more rare in the infant: it is caused in part, at least, by the sinking of the thyroid body at puberty; possibly also by the rising in the neck of the point of origin of the artery. He next takes up the intercostals and lumbar arteries which arise from the aorta. He finds them divergent in children, that is the middle ones run outward, and the upper and lower respectively ascend and descend to their places; but in the adult, as a rule, they are all ascending. The beginning of the descending aorta is found to be decidedly higher in the first half of foetal life than it is afterwards. The aorta also divides into the iliacs at a lower and lower point with advancing years. A new element is brought in here, for in old age the shortening of the spine tends to produce this effect.

Following our author we now go back to the carotids. The point of division has been very accurately determined by many observers, though there are discrepancies in their opinions, but excepting Hilderbrand, quoted by the author, no one, as far as we know, has considered the influence of the length of the neck on this point. Hilderbrand states that the bifurcation occurs at the same point whether the neck is long or short; but Schwalbe's investigations appear to show that the length of the artery is not very variable, and that consequently in a short neck there will be a high division, and in a long neck a low one, — even as low as opposite the inferior border of the thyroid cartilage. The author then calls attention to the fact that the carotid has two distinct ways of dividing: one form is that of simply splitting into two trunks which diverge at a very acute angle; the other is seen when the internal carotid turns at first backward, nearly at a right angle with the parent trunk, and then shortly turns up again. This form Schwalbe compares to a candelabrum. The latter form is the most common in children, and it is evident by a glance at the diagram of the development of the arteries of the neck that the very short, nearly horizontal portion at the origin of the internal carotid is the remains of the third branchial artery. We must remember that while the neck lengthens the arch of the aorta descends to a deeper level, and that the effect of this double pull must be to straighten the course of the long arteries of the neck; thus the candelabrum form of division will become less marked, and may be converted into the form of the acute angle. The stronger the pull the more marked the result; and thus we find in long necks a low division of the first or pointed kind, and in short necks a high division of the candelabrum kind. More than this, the influences which affect the carotid affect also its branches, and in long necks we find the superior thyroid artery at first running upward, while in short necks it runs downward from its origin. Other results come from the same cause. Given a long spinal column, we have not only the peculiarities just mentioned, namely, a relatively low division of the carotid at an acute angle, and a superior thyroid which at first ascends, but the aorta will be relatively short, and the lower lumbar arteries may run downward; while a relatively short column and long aorta will imply that the last mentioned arteries will be horizontal, or even running somewhat, upward, and that we have the other arrangement in the neck.

This is the gist of the paper. We have given so much space to it not because we think any of the points brought out of great value, or because we feel much confidence in many of the observations, but because it seems to us that the principle is sound, and that the laws by which the correlation of apparently very distinct peculiarities is brought about deserve serious attention, and that Professor Schwalbe has done a good work in opening this field.

*The Blood-Vessels of the Calvaria and Dura Mater.*¹ — In spite of all that has been written on this subject Professor Langer has succeeded in discovering some new points. He has found a new anastomosis between the systems of the internal and external carotids, consisting of a branch of the anterior cerebral which leaves that artery where it turns over the front of the corpus callosum, and runs on the falx to meet descending branches of the meningeal arteries. Sometimes a second vessel is given off further back. We will translate Langer's summing up of his observations on the superior longitudinal sinus: "The venous bulgings on the sides of the longitudinal sinus, described by Cruveilhier, show in fact a cavernous structure. They are no true dilatations of the sinus, but thick nets of large veins proceeding from the net-work of veins in the walls of the sinus, which receive also branches from the veins of the diploe. Originally these net-works of both sides are developed only along the surface beside the sinus and on the falx, but even in children they become larger at the vertex, and still larger and even varicose in old age and in diseases causing congestion. Under these circumstances they break through the dura mater, and make impressions on the inner table; sometimes they destroy this also, and open into the diploe. The so-called *foveolæ glandulares* are thus caused directly by varicosities of the veins of the meninges and of the bones. I hereby confirm Trollard's observations.

"This demonstration rests upon corrosion preparations of the sinus which show also that all the cerebral veins of the middle and occipital lobes open into the sinus only at the vertex by apertures very near together. Thus some veins run backward (as regards the current) for as much as an inch and a half in the wall of the sinus before reaching their goal."

Langer describes a thick venous net-work on the outer side of the dura mater, into which veins of the diploe open, which is in immediate communication with another net-work of fine arterial twigs. There are no intermediate capillaries, but the arteries open into the veins by conical communications. In the canals of the diploe also he finds both arteries and veins which join without intermediate capillaries, and that very minute vessels connect the spaces of separate bones running through the cartilage of the sutures even in childhood.

¹ Denkschriften der kaiserlichen Akademie der Wissenschaften. Wien. Band xxxvi.

PROCEEDINGS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION.

EDWARD WIGGLESWORTH, M. D., REPORTER.

THE second annual meeting of the American Dermatological Association was held at the Grand Union Hotel, Saratoga Springs, N. Y., August 27, 28, and 29, 1878, the president, Dr. J. C. White, of Boston, in the chair, and physicians from various States and from Canada being present by invitation in addition to the regular members.

August 27th. After the preliminary meeting of the council and the regular business meeting, the association was called to order by the president for the hearing of papers, at ten A. M. His own introductory remarks referred to the value of the committees upon nomenclature and statistics, and the need for a nomenclature upon which all might agree. This association is the only working body in existence for the establishment of such a nomenclature. He dwelt also upon the necessity of establishing special instruction in the schools and wards in hospitals. A list of publications by members during the past year was omitted on account of its length.

The first paper was upon The Pigmentary Syphiloderm, by Dr. J. E. Atkinson, of Baltimore. This is a late lesion. It has been described by Fournier. It occurs especially in females, is most common upon the neck, of a *café au lait* color, smooth, unelevated, non-desquamating, does not pit upon pressure, and is uninfluenced by internal treatment. It is distinct in appearance from the pigmentation left by syphilitic roseola, from the various forms of chloasmas, and from vitiligo. The hyperpigmented spots may be present without including islets of colorless skin. The disease occurs, according to Fournier and Hardy, even upon blondes and males having a very delicate skin.

Dr. Duhring reported a case occurring upon a blonde and resembling Fournier's cases, differing entirely from chloasma and vitiligo.

Dr. Fox said that the cases reported by Drysdale in England were upon blondes. He thought the importance of the disease overestimated. Though due to syphilis, it should not be regarded as a variety. A staining from disintegration of blood follows many inflammatory conditions, while the lesion in question resembles rather a vitiligo, which is merely an abnormal distribution of pigment in the skin. The islets or whitish macules probably represent previously existing hyperæmias, and occur upon the body as well as upon the neck.

Dr. Piffard had not recognized the disease, but regarded vitiligo either as syphilitic, or as a form which is not "progressive and permanent," but may become stationary, even the color sometimes returning, of which condition he knows two cases.

Dr. Taylor would explain Fournier's cases by the fact that the patients described were usually of the Latin race, in which pigment changes are especially common. The disease occurs in people who have had syphilis, without necessarily any previously existing lesion, and upon those who never have had syphilis. He has seen white maculæ occupying the exact site of a previously existing syphilitic roseola.

Dr. White regarded the condition as rare, though pigmentation after previous lesions is not rare. He had never seen a case of an independent syphiloderm of this character. Those asserting such a product must sustain the burden of proof, and show that where this is, syphilis has been, that it does not occur without syphilis, and that it differs from other similar conditions with or without syphilis.

Dr. Duhring read next a paper upon a Case of the so-called Xeroderma of Hebra, which will be published in the *American Journal of the Medical Sciences*.

Dr. G. H. Fox followed with a paper upon The Proper Use of the Term Acne, which he regarded as a disease of internal origin. He held that iodic and bromic acne were misnomers, just as syphilitic pustules cannot be called acne. Acne rosacea also was not necessarily an acne at all, and the word had better be dropped. In acne the individual lesions are usually acute, though the disease is a chronic one.

Dr. Wigglesworth regarded acne as a pathological condition. Comedones should not be called "acne punctata," but they might, by acting as foreign bodies, occasion, through inflammation, a true acne. If the presence of iodine or bromine in the secreting glands acts in this manner, we are justified in saying "acne from iodine." The condition present in so-called sycosis is that of an acne. Acne may precede, accompany, or follow the "rosaceous" condition. The term would be justifiable only when the two conditions were coexistent, and is a poor one at best. Though individual pustules may run an acute course, yet the indurated papules of acne may last for years. The condition or pathological entity, acne, is due usually to a more general process, as, for example, dyspepsia.

Dr. Von Harlingen considered acne as a distinct disease, but would have some other name for pustular eruptions of artificial origin.

Dr. Piffard thought many, though not all, cases of acne of internal origin. Acne rosacea in many cases shows no affection of the glands, and here the term acne should be dropped. Where both occur it is acne *plus* redness, not acne rosacea.

In the absence of Dr. F. P. Foster, his paper, A Case of Scleroderma, was read by the secretary, and the association adjourned until three o'clock, P. M.

Three P. M. The only paper read at the afternoon session was a long and very valuable one by Dr. C. Heitzmann upon Epithelium and its Performances, showing the necessity of basing dermatology upon anatomical research.

If we watch a single living protoplasmic body, for instance an amœba, a colorless blood-corpuscle, a pus-corpuscle, with high magnifying powers of the microscope (800-1200), we shall invariably see a delicate net-work both within the nucleus and the protoplasm. The body is surrounded by an extremely thin, shining, homogeneous layer, and such a layer always lines vacuoles also, which temporarily or permanently may form in a creeping protoplasmic body. The net-work of the nucleus, its surrounding shell, the net-work of the protoplasm, and the covering and lining shells, both of the body and its vacuoles, are formed by the living matter, the active contraction and passive extension of which cause all changes of shape and locomotion during the life of the protoplasm.

All formations in a highly developed animal body which are analogous to the outer covering layer of a single protoplasmic corpuscle, and which cover the outer surface and line all cavities within the body which are in direct or indirect connection with the outer surface, are termed *epithelia*. Formations, on the contrary, analogous to the wall of a closed vacuole of a single protoplasmic body bear the name of *endothelia*. Epithelia are present on the outer surface of the body, the skin and its elongations, the hairs, nails, sebaceous, sudoriparous, and mammary glands, and on the cavity termed the intestinal tract and its elongations, mucous and salivary; also on the pepsin glands, the intestinal, and those of the liver; on the cavity of the respiratory tract and its mucous glands; on the cavity of the genito-urinary tract, inclusive of all its elongations into the kidneys and the genital glands. Endothelia line the closed cavities of the skull and the spine; all the covering membranes and all ventricles in the brain, and their elongation into the spinal cord; the cavities of the chest, both pleural and pericardial; the cavity of the peritonæum; all articulations; and all blood and lymph vessels, inclusive of the cavities of the heart. A thorough distinction between epithelia and endothelia, however, cannot be maintained, as there is a direct communication between both upon the openings of the uterine tubes into the peritoneal cavity. The epithelial formations of the ovaries are in no communication with the outer world, and the crystalline lens, a formation completely epithelial in nature, is covered by the endothelium of the anterior and posterior chambers. Epithelia and endothelia are fully identical in their intimate structure. There exist single epithelial layers in the body, for instance those of the bile-ducts and of the uriniferous tubules; and also ciliated endothelia, as in the ventricles of the brain and the central canal of the spinal cord.

Epithelia and endothelia represent continuous layers of living matter. The former are the earliest formations in a developing body after the stage of indifferencence, started by the segmentation of the ovum, is passed; they form the epiblast and the hypoblast. These are invariably devoid of blood-vessels and lymphatics, while all formations of the mesoblast, inclusive of its upper layer, from which arise the central nervous organs, are provided with blood-vessels and lymphatics. The epithelial and endothelial layers are built up by single, polyhedral protoplasmic bodies, the formerly so-called "epithelial cells." Each body is separated from its neighbors by a narrow cloak of a lifeless, horny cement-substance, this being kindred to the basis-substance in the connective tissue. Under the microscope we can see only the lateral parts of the cloak, which appear in the shape of a pale seam around each epithelium. The network of the living matter within the protoplasm of the epithelium sends delicate conical offshoots through all formations of the cement-substance, both in epithelia and endothelia. These offshoots, up to the present time, have been termed "thorns of Max Schultze," in honor of their discoverer (1864). That the thorns are universal formations in the cement-substance, and especially formations of the living matter, thus building the bridges by which all epithelia are uninterruptedly connected, can be proved by different chemical reagents, and by the study of pathological occurrences within the cement-substance namely, inflammation, fatty degeneration, etc. In the cement-substance run

the finest terminating fibres of the nerves, also in connection with the thorns, and indirectly with the net-work in the interior of the protoplasm.

We distinguish mainly three varieties of epithelia: the flat, the cuboidal, and the columnar or cylindrical. Flat epithelia invariably construct the outer layers in stratified formations; cuboidal, the middle layers; and columnar, the lowest layer nearest the connective tissue. Single epithelial layers may exhibit any of the named shapes; in the uriniferous tubules, for instance, we find all the three varieties, according to the calibres of the tubules. Columnar epithelia have two subvarieties, namely, ciliated epithelium, with whip-like elongations on the outer surface, therefore occurring only in single layers; the cilia here are in connection with the net-work in the interior of the protoplasm. (Th. Eimer and E. Klein.) Another subvariety is the bacillated epithelium, where the outer surface of the cement-substance is provided with numerous delicate rods, as in the intestinal canal and the bile-ducts. All organs of the body termed "glands" are formations of the epithelium. We distinguish two varieties of glands, namely, the acinous and the tubular. A roundish elongation of the epithelium into the connective tissue forms a simple acinous gland, represented by the mucous glands of the oral cavity, of the larynx, and of the trachea. Repeated folding up of the pouch leads to the formation of compound acinous or racemose glands, represented by the sebaceous, the salivary, the lacteal, the prostatic, and other mucous glands. An elongation of the epithelium, prevailing in the longitudinal direction, is termed a simple tubular gland, and is represented by the pepsin and the intestinal glands. Repeated ramifications of the tubules result in the formation of compound tubular glands, represented by the seminiferous and uriniferous tubules. Another subvariety of compound tubular glands may originate by a coiling of the tubule, as we see in the case of the sweat and ceruminal glands.

The main performance of epithelium, besides the protection of the whole body, conduction of terminal nerve fibres, and therefore of sensation, etc., is the elimination of used-up material from the body, that is, secretion. Every glandular formation is epithelial, and every epithelial body can be considered as a gland, inasmuch as the secretion is based upon a function of single epithelia.

There are mainly three varieties of secretion, namely, the watery, the mucous, and the fatty. The watery secretion cannot be directly studied under the microscope; we only conclude by watching amœbæ fed with carmine particles that, at any time when, through the visible contraction of the living matter within the protoplasm, carmine particles are thrown out from the amœba, a certain amount of its fluid is also discharged. A liquid once present in the blood must necessarily pass through the walls of the blood-vessels, and enter first the protoplasm of the epithelia, before it can be expelled from them; evidently owing to the contraction of the living net-work of the protoplasm. The watery secretion is carried on by the lachrymal and the sweat glands; the latter produce a fluid greatly varying in the amount of its solid contents and in its consistence at different times. As the death of the body approaches the perspiration becomes inspissated and almost mucous in its character. The inspissation of the fluid pressed out from the blood-vessels of the

tufts of the kidney is evidently due chiefly to the action of the epithelium of the uriniferous tubules.

The mucous secretion can be immediately observed under the microscope, preferably upon minute particles cut off from the inner surface of the small intestine of a frog, by the addition of a very dilute solution of chromic acid or bichromate of potash, pure water being too rapid in its action. We notice at first a swelling of the protoplasm near the outer or free surface of the epithelium. There the covering cement-substance bulges out, and, after having reached the uppermost capacity of expansion, bursts, and a pale, globular body jumps forward, — the swelled protoplasm, in which no trace of the former structure can be seen. A number of such pale, globular bodies coalesce and form the jelly-like mass called mucus. At other times the whole protoplasm swells within the cloak of the cement-substance, and, after being freed, still shows the net-like structure of the protoplasm or isolated granules in lively motion, the broken particles of the former living matter. Salivary and mucous corpuscles arise thus from slow action upon the protoplasm. The cloak of the cement-substance, partly or totally emptied and perforated at one end, gives the appearance of a "goblet cell." A variety of mucous secretion is that of the stomachic juice or of the semen, in which there are suspended formations of living matter, — the spermatozoids, a direct offspring of the epithelia of the testicles. Saliva represents an intermediate condition between watery and mucous secretion.

The third variety of secretion can be best studied under the microscope upon colostrum-corpuscles, which are suspended in the serous discharge of the mammary glands for a few days after delivery. Here we see the first-formed fat-granules still in connection with the net-work of the living matter within the protoplasm, and we readily arrive at the conclusion that fat is a directly transformed living matter. During the locomotion of a colostrum-corpuscle fat-granules are very often thrown up from its interior. (S. Stricker.) After a few days, however, no more colostrum-corpuscles are secreted, because the living matter of the epithelia is completely transformed into fat-granules, leading to a destruction of the epithelia, the granules of which commingle with a serous fluid and form the emulsion called milk. This process of fatty change of the living matter of the epithelia of the mammary glands is a remarkably rapid one; on microscopic specimens of the breast in full lactation we find but little protoplasm unchanged; the chief part has been transformed into fat-granules, which, having been extracted from the specimen with oil of cloves, leave only the shells of the cement-substance behind. The highest degree of fatty change of the protoplasm is reached in the sebaceous and the ceruminal glands.

The first day ended with the report of the committee upon statistics, Dr. J. C. White, chairman. This report is based upon nearly seventeen thousand consecutive cases of diseases of the skin, showing their prevalence in different parts of the country, and will be published.

(To be concluded.)

DR. DWIGHT'S PRIZE ESSAY: AN ANALYTICAL NOTICE.¹

DR. DWIGHT is well known by his contributions to anatomical knowledge. Patient, careful, diligent, he has gleaned many interesting *faits pour servir*, in one of the closest-cropped stubble fields of science, the department which is commonly distinguished as descriptive anatomy. After our surfeit of histology — in which also Dr. Dwight has worked intelligently — it is refreshing to see a treatise in which the body is studied without the microscope. Thousands of observers have studied it in that way for hundreds of years, and yet there is always something to be learned. Even the bones, which have had far more than their share of attention, have secrets to reveal to the eyes of each successive generation. There are few, if any, of our experts, even among those who have taught anatomy, and given year after year what they and their students thought minute descriptions of the bones, who will not find interesting, and in certain circumstances important, facts about them of which they have never heard or read or thought, in this well-studied essay.

"The purpose of this paper," says the writer, "is to lessen these difficulties by giving practical directions how to work, by testing the truth of the statements of authors, and when these disagree by declaring which one, in the writer's opinion, is most trustworthy, and finally, by calling attention to a number of anatomical facts, some of which are believed to have been overlooked, and others of which are not easily found. . . .

"The questions to be determined usually are: —

"1st. Are these bones human?

"2d. Do they belong to one or more individuals?

"3d. What is the sex?

"4th. What is the age?

"5th. How long is it since death?

"6th. What is the height?

"7th. If certain parts are wanting, can we estimate their size? If so, how?"

I. *Are the bones human?* This first question will be readily answered by any expert in human anatomy who knows something of the bones of the lower animals, and is disposed of in ten lines.

II. *Do the bones belong to one individual?* The answer to the second question occupies nearly half the paper, embodying a large number of measurements and weights, with three charts and seven elaborate tables. The most striking facts brought out are these: —

The bones of the two sides of the body often differ in length, and may differ considerably: thus the clavicles differed in one instance as much as .39 of an inch; the humeri half an inch; the femora three quarters of an inch. These observed differences of course imply the probability if not the certainty of still more considerable diversity in other unobserved cases.

The greater portion of the labor of this section is expended upon the separate vertebrae and the vertebral column as a whole. Here are a few of the many points examined and illustrated: The chart of weights puts the apex of

¹ *The Identification of the Human Skeleton. A Medico-Legal Study.* To which was awarded the Prize of the Massachusetts Medical Society for 1878. By THOMAS DWIGHT, M. D., of Boston, late Professor of Anatomy at the Medical School of Maine.

the second of the four pyramids of which the spinal column is commonly said to be made up, at the third instead of the fourth dorsal vertebra. The mean weight of the third in grammes in the seven cases tabulated was 10.54 for the third, and 10.84 for the fourth; in grains 163 and 167. Sometimes, however, the proportions are reversed, and the difference is of little moment.

All anatomists would probably agree that they could distinguish the following vertebræ in addition to the atlas and axis: the seventh cervical, first and last three dorsal, and the fifth lumbar. If the student consults his Gray's anatomy, and expects to find all the corresponding vertebræ like those in the figure there given, he will say that the *four* lowest are easily to be recognized. Let him consult Dr. Dwight and the cases he cites from Professor Struthers, and he will learn the necessity of caution in relying upon the figures in the best of text-books, which, however trustworthy as copies of nature, can give only one of perhaps many varieties of formation.

"The shortness of the transverse process in the tenth (dorsal vertebra), the breaking up of it into three knobs in the eleventh, and their reduction in size in the twelfth, are very characteristic." It might be wished that Dr. Dwight had been more particular in his notice of these "three knobs," two of which are known as the mammillary and accessory processes, and are of great interest as developed in some of the lower vertebrates. They differ very much in individual skeletons, and are not satisfactorily described in most of our text-books.

The changed direction of the upper articular surfaces commonly found in the twelfth dorsal vertebra is the subject of variations worth noting, possibly of use in some exceptional case. The greater weight of the fifth lumbar vertebra in some cases, notwithstanding the rapid bevelling of its lower surface, is also noticeable. Dr. Dwight speaks of this as more liable than other vertebræ to present important variations in individual cases.

Tables and charts are given showing the heights of the bodies of the vertebræ in the different regions, also the breadth of the transverse processes, all of which may help in forming an opinion in a doubtful case.

The hands and feet are studied with care for the purpose of distinguishing their most characteristic individual bones. Selecting one of the most obvious questions, let us ask, Is the fore-finger or the ring finger longest? Professor Mantegazza published 712 cases: in 589 the ring finger was the longest, in 91 the fore-finger. Dr. Dwight dissected ten hands to get trustworthy data. In eight the ring finger was longest before dissection; in all the cases after separation from the metacarpal bones.

III. *The sex.* Six of the fifty pages are given to the differences in the skeleton of the male and female. Apart from the characteristic slenderness of the bones and the slight comparative development of the processes, the most important distinctions are to be found in the pelvis, and there does not appear to be any very significant addition to the well-known characteristic marks. Mr. Ward's observation as to the different curves of the male and female sacrum is confirmed by the numerous specimens at our medical college, that is, if the small, broad, light ones may be assumed to have belonged to females, and the large, narrow, heavy ones to males. It is a comfort to find that Dr. Dwight does not make much of the special form of the foramen ovale in the female. It is "said to be more triangular in women." But a conscientious

teacher cannot always show his students what their text-books lead them to look for, and the temptation to draw on his imagination in such exigencies is one of the demoralizing influences of *ex cathedra* prelections and demonstrations.

"Hyrtl's law" that "the manubrium of the female sternum exceeds in length that of half the body [the gladiolus, or middle piece], while the body in the male sternum is at least twice as long as the manubrium," is confirmed, on the whole, by Dr. Dwight's measurements, but the difference between the sexes is very slight in the series which he gives.

IV. *The age.* Dr. Dwight enumerates four stages of life usually capable of being distinguished from each other: the immature stage reaches to twenty-five in the male, to twenty-two in the female; the young stage, from thence to about thirty; the mature stage, from thirty to about sixty; the senile stage, which may begin at a very variable period. "Apart from the teeth, we have the following guides to an opinion: the union of the epiphyses, the obliteration of the lines of this union, the obliteration of the cranial sutures, the joining of distinct pieces, and finally senile changes in the shape and constitution of bones." Much caution is necessary in drawing inferences from most of these appearances after the age of maturity is reached. He calls attention to the fact that the tip of the acromion sometimes remains ununited throughout life. Certainly it is common enough to find it ununited, and still more frequently presenting a distinct line of demarcation from the rest of the process in the adult, but whether throughout a life of threescore or fourscore years may be questioned.

The teeth of the second set are all present before the age which the essayist is considering. "The wisdom teeth usually appear between eighteen and twenty-five, but they may appear at seventeen or not until thirty, or possibly not all. They are like the trains of some railroads—due when they arrive."

V. *The time since death.* So much depends on the soil, temperature, and other accidental circumstances that "the expert should not allow himself to express an opinion." This is a strong statement. The grave-digger in Hamlet would have ventured an opinion, and there are old sextons who could probably give a tolerably shrewd guess to which a jury would attach some value, and from whom even the expert might learn something. But over-caution is better than over-confidence in all cases involving so many complex conditions.

VI. *The estimation of the height.* This is a very curious chapter, which must be studied in the essay itself. The great point of difficulty is to get the true vertical measure of the spinal column, for which purpose the thickness of the intervertebral disks and the effect of the different curves must be carefully estimated. Hermann Meyer's geometrical plan (which reminds one a little of Gulliver's Laputan tailor's measurements) is very ingenious, and may serve as a kind of scaffolding to construct the spinal column by on the bed of plastic material in which the vertebræ are to be imbedded.

Very precise directions are given for placing the spine upon the pelvis, which is a matter of much importance, and requires special care. The arrangement of the lower limbs in position, and the addition of the head, with all proper allowances for the soft parts which add to the length of the body, are treated of and complete this chapter.

VII. *Proportions of the body.* Position of the top of the symphysis pubis. We may sum up by saying that in woman the centre is at the symphysis pubis, though in tall ones no doubt it is below it, and in short ones above it. In average men the centre is a little below the symphysis, and in tall men from 2 cm. to perhaps 2 inches below it. The mean height of the parts above the spine of the seventh cervical vertebra was found by Dr. Gould to be 9.95 inches, or .148 of the height. This may be of special use if the head is not found with the other bones.

VIII. *Missing parts.* The result just referred to may be applied, if the head is missing, by adding 9.95 inches for a male adult to the height measured up to the level of the seventh cervical vertebra. For the height of the head alone $5\frac{1}{2}$ inches may be added for the male, a little less than 5 inches for the female, with a quarter of an inch for the scalp, — these measures being of course mere approximations. Various other directions are given in case parts of the spine, the pelvis, or the lower extremities are wanting. For these and numerous details the reader of this notice must refer to the essay, of which only a sketch is here given.

A critic fails to assert the supremacy of his calling who does not point out something which may be improved or corrected in the work which has very probably taught him the greater part of what he knows about the subject treated. Something might be said about the *color* of bones as serving to distinguish one skeleton from another, even under the same circumstances of date and exposure; of the presence or absence of *fat* in them, especially as connected with the age of the subject; and of the curious effect of *heat* in altering the size and form of bones, as shown in the too famous trial in which the bones had been submitted to the heat of a chemical furnace.

This useful essay will be looked over by many and will be studied by a few. It will then be laid away and slumber, in good company, it may be hoped, for it is worthy of such neighborhood. By and by the bones of the missing peddler — the one who disappeared five or ten or some other number of years ago — the peddler who is always missing, at any rate — will be found, or will be said to have been found in somebody's cellar, or under somebody's woodpile, or other unsuspected locality. The village will be in a stir; the neighboring doctor will be called on to decide whether the bones are human, whether they belong to one person, the sex, the probable age, and so on.

This case or something like it is sure to happen in dozens of localities; it is always happening. The corpulent books of anatomy are too short-winded to give a connected and detailed answer to all the questions that arise. Then it will be that Dr. Dwight's attenuated octavo shall revenge itself on the dust and cobwebs of temporary oblivion. The resurrection of the missing peddler, a fact which will renew itself to the end of time, will call forth his slender volume from its obscure retreat, and his name will be spoken with grateful remembrance as that of the guide who has furnished a clue to the expert in one of his most responsible tasks, — that of determining a fact on which the life and character of a fellow-creature, suspected of the gravest of crimes, may be depending.

O. W. H.

CHARBON IN HAIR FACTORIES.

A RECENT outbreak of charbon (anthrax, or malignant pustule) at a hair factory near this city has attracted not only professional but public attention, and will accomplish some good if it arouses sufficient interest to compel manufacturers throughout the country to afford their operatives all the safeguards that the present state of science shows to be worthy of confidence.

This affection has been studied by able men in the profession, and may now be regarded as well established among the preventable diseases. Let our manufacturers take the prevention of this disease in hand with the same energy they give to the details of the economy of production, and but little opportunity would occur for the study of it among their operatives. Attempts at concealment of its existence are useless, and ignoring it longer is impossible.

The application of steam at a high temperature proved effective at Walpole when the business was conducted there, but was objected to as not being economical. Boiling also seemed to answer the purpose, but was open to the same objection. Since then the experiments of Davaine¹ show that a very moderate temperature, 140° F., if maintained in the presence of moisture, is sufficient to destroy the virus, though greater heat renders this much more certain and shortens the time. The results of his extensive experiments² with disinfectants show that sulphuric acid, which is cheap, is the most valuable, and has the advantage of not being so offensive as carbolic acid, which has been recommended for the same purpose.

Though Siberian hair just at present has a bad reputation as a vehicle for the virus, and though undoubtedly charbon has prevailed extensively in Russia, during the past few years South American hair has elsewhere been considered particularly dangerous; and the truth is that any locality may become the seat of origin of this affection, as domestic animals all over the globe are subject to the disease, and it may be communicated by themselves, their skins, or hair.

Local boards of health can do but little in enforcing sanitary regulations in the works of a wealthy company, but our State Board of Health may find a field of usefulness here, and distinguish themselves again as they have done before.

MEDICAL NOTES.

— Dr. Robert White, Jr., of this city, has been appointed an assistant surgeon in the United States Marine Hospital service, and assigned for duty at the port of Philadelphia.

— Wittich (*Berlin. klin. Wochenschrift*, No. 11, 1878) states that for the sleeplessness of a certain class of female lunatics affected by melancholia, extreme anxiety, hallucinations, and a low state of nutrition, camphor is an excellent remedy, and acts favorably when chloral, morphia, bromide of potassium, etc., all fail to induce sleep. Wittich injects 0.1 to 0.2 grammes of camphor subcutaneously after dissolving it in sweet almond oil.

¹ Compt. rend. Acad. des Sciences, September 29, 1873. Action de la Chaleur sur le Virus charbonneux.

² Compt. rend. Acad. des Sciences, October 13, 1873.

— There appears to be no abatement in the ravages of the yellow fever. The number of deaths both in Memphis and New Orleans is increasing daily. We hear less of Grenada, for the simple reason, we suppose, that the disease there has done its worst. Notwithstanding the case of fever reported at Mobile, there is no extension of the disease at that point according to the latest reports. Dr. Woodworth, in an interview with a *Tribune* reporter, maintains that whenever the fever becomes virulent in a large city the wisest course is to establish temporary camps on high ground two miles away, quarantine being effected at an intermediate series of open-air hospitals, where the clothing of refugees can be thoroughly disinfected. He does not believe that there is any danger of infection from the mails. The only possible source of danger being the mail bags, which can be easily disinfected. The only pleasing feature of this calamity is the generous aid tendered to the South by Northern sympathizers, and the devotion to the sick of many self-sacrificing individuals, among whom physicians figure, as usual, prominently. We may venture to suggest that a fund be held in reserve to aid in placing the infected cities in a proper sanitary condition to resist future attacks.

— The forty-sixth annual meeting of the British Medical Association was held in Bath during four days of the second week of August. A painful incident at the opening was the reading of the address to have been delivered by the late president, Dr. Eason Wilkinson, who died suddenly but a few weeks ago. After appropriate remarks on the sad event, the society elected Dr. Falconer, of Bath, president for the ensuing year. The report of the council showed a flourishing condition of the association, as regards both finances and the increasing number of members, seven hundred and forty-nine having been elected since the last annual meeting; total number now on books seven thousand five hundred and thirty-six; total balance of assets over liabilities in January last was nearly £5504; annual income, £11,000. It was also remarked that the journal of the association, the *British Medical Journal*, continues to increase in popularity. During the past year a special grant of £100 was made for the investigation into the pathology of hydrophobia and rabies. Medals for distinguished merit cost £154. The need of new offices led the "Journal and Finance committee" to take new premises in the Strand, London, on a lease of twenty-one years, at a rent of £320 per annum. The question of admission of women was considered in a paper which negated their admission.

The formation of a new branch of the association in Belfast for the north of Ireland was announced; there are now three branches in Ireland, five in Scotland, and twenty-two in England. The first colonial branch, namely, in Jamaica, has also during the year received the recognition of the society. Reports were also made concerning a memorial to the proper authorities in regard to securing the public against incompetency of medical health officers; concerning a second in relation to present anomalies in the boundaries of sanitary districts, and the need of their rectification in the interest of public health. Progress was reported in furthering legislation for habitual drunkards, and in registration of disease.

The following distinguished foreigners were recommended for election as

honorary members: Billroth of Vienna, Charcot of Paris, Esmarch of Kiel, Liebreich of Berlin, Ludwig of Leipzig, Pasteur of Paris, Sayre of New York.

A motion appointing Cork as the place of the annual meeting in 1879, and Dr. D. C. O'Connor as its president, was carried. The address of the president, Dr. Falconer, those of Dr. Goodridge and Mr. Wheelhouse on Medicine and Surgery respectively, the addresses also of Dr. Grainger Stewart, Mr. Geo. W. Callender, and Dr. Alfred H. Clintock at the opening of the sections respectively of Medicine, Surgery, and Obstetrics, were eloquent and instructive. Their length obliges us to refer our readers to the *British Medical Journal* for August 10th, in which will be found a report of the whole meeting in detail.

The occasion was one of much interest, several hundreds of members were present, and in all respects the association seems to be steadily growing.

—Sickness is greatly on the increase in the Russian army. At San Stefano twenty thousand patients await removal, much difficulty being found in chartering steamers, the crews of which desert from fear of contagion.

—Dr. von Winiwarter has been called to Lüttich to take the position formerly held by Gussenbauer. — Professor Spiegelberg, of Breslau, has declined a call to Strassburg because he feels that his services are needed at the Breslau school.

—Dr. Edward C. Spitzka, of New York city, has secured the prize offered by Dr. Hammond, of that city, for the best essay on the Physiological Action of Strychnia on the Brain, Spinal Cord, and Nerves.

—Of the American Archives of Dermatology the *Medical Times and Gazette* says: "Publications like this tend to awaken healthy interest in the subject of which they treat, and in proper hands are a direct antidote to charlatanism. Hence we regret that we should have to look to America for our digest of cutaneous medicine, as we look to her for sewing-machines, talking-machines, and other useful commodities. . . . We have in London the largest amount of skin disease for scientific investigation of any city in the world, and yet how little of it is utilized as it should be!"

—According to the *Lancet*, F. Winckel has investigated the generative organs of one hundred and fifty sterile women dying at a sexually mature age, and finds that, apart from such causes as vaginismus, which could be ascertained only during life, the causes of sterility might be classified as follows: (1.) Mechanical obstructions. (2.) Chemically destructive influences. (3.) Disturbances in the nutrition of the ovaries. In almost all instances two or all of these conditions were present together, as in atresia of the Fallopian tubes, there were firm adhesions of the ovaries; in myomata there was abnormal position or disease of the mucous membrane, ovarian tumors, etc. He admits stenosis of the os uteri to be a cause of sterility only when follicular catarrh is present with accumulation of mucus in the cervix. It is only in these cases that Winckel forces a passage, and applies a caustic to the membrane.

—The recent hospital Sunday collection in London amounts to nearly twenty-five thousand pounds, and, in spite of financial depression, is not likely to show any falling off from last year.

SHORT COMMUNICATIONS.

THE FISHER CASE: LETTER FROM DR. TREADWELL.

MR. EDITOR, — In regard to your quotation from my letter to Dr. Cheever, contained in your issue of last week, I would like to make the following explanation: —

In my testimony before the coroner's jury in the case referred to I said nothing about *villi* of the *chorion*. I had had no particular experience in this special phase of microscopic work, and consequently did not consider myself justified in using the results of such investigation in the way of evidence.

A day or two after my appearance before the inquest, when Professor Dalton was brought to my house for the first time, he asked me if I had found the *villi* of the *chorion*. I replied, "I think I have, but I have not had much experience in that kind of work." Dr. Dalton then made a brief microscopic examination with a negative result, remarking at its close that for certain reasons he was not surprised at his failure to find the *villi*, even if they had existed. I resolved upon further investigation in regard to this point, but before I had opportunity to execute my design Dr. Cheever published what I considered an unfair letter, in a hurriedly written reply to which I said, "The presence of the *corpus luteum* was not relied upon as the only or the main sign that pregnancy had existed," it seeming to me that the other indications noted in the report of the autopsy afforded evidence hardly secondary to that furnished by the *corpus luteum*. I then inadvertently added, "The presence of the *villi* of the *chorion* was alone sufficient to settle that point." Having excluded this point from any bearing in my testimony, my allusion to it in the letter referred to was an inadvertence due to the haste in which I wrote. Subsequent investigation has convinced me that this proof of pregnancy did not exist.

In this connection I wish to say that your supposition that I am now "convinced that the true *corpus luteum* is not a sure sign of pregnancy" is not correct; on the contrary, I am more than ever satisfied that it is, and I suppose there is no objection to my saying that since the completion of his recent researches Professor Dalton has expressed a similar opinion, saying to me, "There is no doubt about it."

I am now satisfied that in the Fisher case the *corpus luteum* found was not a true but a false one, so modified by abnormal conditions that in most respects it resembled a true one, but from which in other and vital points it differed. I have no doubt that had Professor Dalton seen it in its fresh state he would have detected its real character.

Very respectfully,

J. B. TREADWELL.

Boston, September 7, 1878.

CHOREA A SELF-LIMITED DISEASE.

THE *Medical Times and Gazette*, August 10th, reports Professor Sée as saying (*Union médicale*, August 1st), "It is right to say, in a general way, that chorea cures itself, and that the various modes of treatment which are resorted to exert little effect on its duration." Here is a chance offered for new investigations. ***

ABSTRACT OF SANITARY REPORTS RECEIVED DURING THE PAST WEEK UNDER THE NATIONAL QUARANTINE ACT. — No. IX.

OFFICE SURGEON-GENERAL U. S. M. H. S., WASHINGTON, September 7, 1878.

NEW ORLEANS. — During the week ended yesterday noon there were 1732 cases of yellow fever and 526 deaths, making in all 4609 cases and 1395 deaths. During the twenty-four hours to noon yesterday there were 280 new cases and 61 deaths.

PORT EADS, LA. — During the past week there was one death from yellow fever, but no new cases.

MORGAN CITY, LA. — During the week to yesterday noon there were fourteen cases of yellow fever and two deaths, making in all twenty-two cases and six deaths.

VICKSBURG. — During the week ended yesterday evening there were 181 deaths, 41 of which occurred in the last twenty-four hours, making in all 366 deaths. About 2500 cases have occurred since the outbreak. Surgeon Keyes telegraphs that "the fever is on the increase, and it is impossible to obtain accurate data."

GRANADA. — Dr. Warren Stone reports 96 new cases of yellow fever and 49 deaths during the week ended yesterday evening.

CANTON, MISS. — During the fortnight ended yesterday noon there were 172 cases of yellow fever and 22 deaths, making in all 190 cases and 30 deaths. There are 120 cases under treatment, of which 16 occurred during the last twenty-four hours.

OCEAN SPRINGS, MISS. — During the week ended yesterday evening there were 15 cases of yellow fever and five deaths.

HOLLY SPRINGS. — The first case of probable yellow fever occurred on the 27th of August, resulting in death September 1st. Two deaths from undoubted yellow fever followed on the 2d. To yesterday evening about 100 cases and 25 deaths had occurred. More than one half of the population fled the city between the 2d and 5th inst. All of the members of the Board of Health are sick.

MEMPHIS. — For the week ended Thursday evening, September 5th, there were 529 deaths from yellow fever. Dr. Thornton reports that the number of cases cannot be obtained. During the week before the number of deaths (241) and the number of cases (721) were as one to three.

HICKMAN, KY. — The first case of yellow fever occurred August 16th. There were 60 cases and 24 deaths to yesterday evening.

LOUISVILLE. — For the week ended yesterday evening there were 25 new cases of yellow fever and seven deaths, all refugees and river boatmen.

ST. LOUIS. — During the week ended yesterday evening there were three deaths from yellow fever, — two refugees and a resident nurse who attended the refugees in hospital. At quarantine, below St. Louis, there were ten new cases admitted and nine deaths, all refugees but one, — the steward of the quarantine hospital, who is now sick, he having contracted the disease at quarantine. All boats and trains from infected districts are prohibited from entering the city, which remains healthy.

PASCOGOLA, MISS. — Three cases of yellow fever in shipping from New Orleans between the 1st and 5th inst.

CINCINNATI. — From August 28th to afternoon of September 4th, three new cases of yellow fever and two deaths occurred among refugees.

BAY ST. LOUIS, MISS. — One refugee arrived from New Orleans August 26th with yellow fever, and was sent back to New Orleans the next day. No other cases.

MOBILE. — City healthy. No yellow fever since the one death which occurred August 31st.

KEY WEST. — Two cases of yellow fever and one death during the week ended yesterday noon.

HAVANA. — Seventy-four deaths from yellow fever and seven from small-pox during the week ended August 31st.

MATANZAS, CUBA. — During the fortnight ended August 30th there were no cases of yellow fever in the bay, and only a few cases on shore.

SAGUA LA GRANDE, CUBA. — Since the 16th of August there were two deaths from yellow fever, but at the date of advices, August 28th, there were no cases in town or harbor.

CALCUTTA. — Nine deaths from cholera and 26 from small-pox: week ended July 6th.

BOMBAY. — Forty-one deaths from cholera and six from small-pox: week ended July 16th.

MADRAS. — Six deaths from cholera: week ended June 28th.

No official reports could be obtained from Port Gibson, Miss., Greenville, Miss., and Brownsville, Tenn., where yellow fever is reported to exist.

Reports from other places indicate good health, including Blount Spring, Ala., and Cedar Keys, Fla., both erroneously reported, through the press, as having cases of yellow fever.

JOHN M. WOODWORTH,

Surgeon-General U. S. Marine Hospital Service.

COMPARATIVE MORTALITY-RATES.

| | Estimated Population, July 1, 1878. | Deaths during week ending August 31, 1878. | Annual Death-Rates per 1000 living. | | |
|---------------|-------------------------------------|--|-------------------------------------|--------------------|-----------------------------|
| | | | For the Week. | For the Year 1877. | Mean for ten Years, '68-77. |
| New York. | 1,093,171 | 553 | 26.30 | 23.42 | 28.71 |
| Philadelphia. | 876,118 | 307 | 18.16 | 18.80 | 21.54 |
| Brooklyn. | 549,438 | 233 | 22.05 | 21.51 | 25.50 |
| Chicago. | 460,000 | 165 | 18.65 | 17.83 | 22.39 |
| Boston. | 375,476 | 173 | 23.96 | 20.10 | 24.34 |
| Providence. | 100,000 | 47 | 24.44 | 18.81 | 19.20 |
| Lowell. | 55,798 | | | 19.09 | 22.50 |
| Worcester. | 54,937 | 14 | 13.26 | 20.06 | 22.30 |
| Cambridge. | 53,547 | 24 | 23.30 | 18.69 | 20.83 |
| Fall River. | 53,207 | 24 | 23.46 | 21.35 | 24.06 |
| Lynn. | 35,528 | 20 | 29.28 | 20.42 | 19.67 |
| Springfield. | 33,981 | 14 | 21.44 | 16.02 | 19.77 |
| Salem. | 27,140 | 13 | 24.90 | 20.38 | 21.15 |

ERRATUM.—On page 319 of the JOURNAL for September 5th, the sentence, "and the average cost of each is about two dollars and a half," should read, "and the average cost of each (excursion) is about two hundred and fifty dollars."

BOOKS AND PAMPHLETS RECEIVED.—Variola: Its Causes, Nature, and Prophylaxis, and the Dangers of Vaccination. By C. Spinzig, M. D.

Urethral Stricture. By Thomas R. Brown, M. D. Baltimore. 1878.

Twentieth Annual Announcement of the Chicago Medical College.

Addresses delivered June 13, 1878, before the Alumni by B. L. Hovey, M. D., of Rochester, and by William C. Wey, M. D., of Elmira, N. Y., before the Graduating Class of the Syracuse College of Medicine.

Annual Report of the Inspectors of the State Prison of the State of Michigan for the Year 1877.

The Identification of the Human Skeleton. A Medico-Legal Study, to which was awarded the Prize of the Massachusetts Medical Society for 1878. By Thomas Dwight, M. D., of Boston, late Professor of Anatomy at the Medical School of Maine.

"You are bones, and what of that?"

Every face, however full,

Padded round with flesh and fat,

Is but modeled on a skull."—*The Vision of Sin.*

Boston: David Clapp & Son. 1878.

Annual Reports of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the Fiscal Years 1876 and 1877. Washington: Government Printing Office. 1878.

Bibliotheca Medica. Cincinnati: Robert Clarke & Co. Price twenty-five cents.

Stricture of the Male Urethra: Its Radical Cure. By Fessenden M. Otis, M. D., Professor of Genito-Urinary Diseases in College of Physicians and Surgeons, New York, etc. New York: G. P. Putnam's Sons. 1878.

Medical Communications of the Massachusetts Medical Society. Vol. XII. No. 4. Boston: David Clapp & Son. 1878.

From Snow Banks to Orange Orchards. An Essay by James R. Nichols, M. D., A. M.

The Causation of Typhoid Fever. Fiske Fund Prize Essay. By George E. Waring, Jr. Cambridge: Riverside Press. 1878.

Transactions of the Medical Association of the State of Missouri at its Annual Session in May, 1878. St. Louis: George O. Rumbold & Co. 1878.